

# ASTRA® 701 PVC TUBING TEST DATA

**Class 90°C • For General Purpose Applications**

**QPL MIL-I-631, Grades A and B, Form U, Subform Ua**

**Class I and II, Category 1, ASTM D922 Grades A and AFR**

## DESCRIPTION

ASTRA 701 PVC tubing is a high quality, general purpose, extruded polyvinylchloride tubing of exceptionally wide thermal range, from +90°C to -55°C.

## FEATURES

ASTRA 701 tubing maintains a high dielectric strength, excellent flexibility, non-corrosiveness and fungus resistance over its full temperature range.

## APPLICATIONS

ASTRA 701 tubing finds applications in appliances, electric motors, commercial and military aircraft, automotive components and a host of other installations. Its low temperature characteristics make it particularly useful in airborne equipment, electrical harnesses, motorcycles and snow machines.

## APPLICABLE SPECIFICATIONS

QPL MIL-I-631, Grades A & B, Form U, Subform Ua, Class I and II, Category 1, ASTM D922, Grades A & AFR.

## PERFORMANCE CHARACTERISTICS

Property	MIL-I-631 Conditioning Grade A & B	MIL-I-631 Requirements		Typical ASTRA 701 Performance
		Grade A	Grade B	
Dielectric Strength – Dry – Wet	C-96/23/50 C-96/23/96	Min. 800 V/mil Min. 90% of dry	Min. 750 V/mil Min. 85% of dry	1000 V/mil 95% of dry
Dielectric Constant – Dry – Wet	C-96/23/50 C-96/23/96	Maximum 7.0 Maximum 8.0		3.22 3.61
Dissipation Factor – Dry – Wet	C-96/23/50 C-96/23/96	Maximum .14 Maximum .16		.043 .057
Volume Resistivity	24 h immersion 23°C	Min. $1 \times 10^{10}$ ohm-cm		$31.5 \times 10^{10}$ ohm-cm
Tensile Strength	C-96/23/50	Min. 1800 psi	Min. 1450 psi	3000 psi
Elongation – Unaged – Aged	C-96/23/50 400 h 100°C	Minimum 200% – Maximum 450% Maximum change 35%		350% 3.4%
Softening Temperature	C-96/23/50	Min. 75°C	Min. 70°C	88°C
Lengthwise Shrinkage	2 h 100°C	Maximum 10%		2.6%
Flexibility	200 h 100°C	No cracks after 180° bend around 1/8" mandrel		Conforms
Ultra-Violet Resistance	120 h under S-1 lamp	Not required	No cracks 180° bend around 1/8" mandrel	Conforms
Cold Brittleness	2.5 minutes	-30°C	-46°C	-57°C
Flame Resistance	None	Maximum 15 sec		0 sec
Oil Resistance	High swelling oil 200 h at 50°C	No cracks, no oil penetration Max. 10% increase in diameter		Conforms 0.5% increase
Corrosion Resistance	720 h 70°C high humidity	No corrosion of conductor. 2% max. increase in resistance of conductor		Conforms +1.2% increase
Fungus Resistance	12 mos. 23°C 50% RH in fungus culture	No fungus growth		Conforms
Bursting Strength (increasing pressure)	C-96/23/50	Min. 29 psi to 96 psi		Exceeds all requirements
Bursting Strength (continuous pressure)	C-96/23/50	Min. 15 psi to 48 psi		by 96%

Standard colors - clear and black.

Standard package - spools only.

Standard sizes 24 to 1".